Accident Rpt# ERA16FA031	**11/04/2015 1933 EST**	**Regis# N622BT**	**Queens, NY**	**Apt: N/a**	
Acft Mk/Mdl FLIGHT DESIGN GMBH CTLS-NO SERIES		**Acft SN 11-11-05**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Factual**	**Prob Caus: Pending**
Eng Mk/Mdl ROTAX 912 ULS		**Acft TT 321**	**Fatal 1 Ser Inj 0**	**Flt Conducted Under: FAR 091**	
Opr Name: MCGEE JAMES B		**Opr dba:**		**Aircraft Fire: NONE**	
				AW Cert: LTSP	

Events

1. Maneuvering - Loss of visual reference

Narrative

HISTORY OF FLIGHT

On November 4, 2015, at 1933 eastern standard time, a Flight Design GMBH CTLS light sport airplane, N622BT, was substantially damaged after it impacted the Atlantic Ocean near Queens, New York. The private pilot was fatally injured. The airplane was owned and operated by the private pilot under the provisions of 14 Code of Federal Regulations Part 91 personal cross-country flight. Night visual meteorological conditions prevailed, and no flight plan was filed. The flight originated from Northeast Philadelphia Airport (PNE), Philadelphia, Pennsylvania, about 1900, with an intended destination of Portsmouth International Airport, Pease (PSM), Portsmouth, New Hampshire.

According to personnel at the departure airport, the airplane was "topped off" with fuel before departure. A fuel receipt indicated 17 gallons of 100 low-lead (LL) aviation fuel was added to the airplane about 1840 on the evening of the accident.

Federal Aviation Administration (FAA) Air Traffic Control radar and voice communication information revealed that the airplane departed PNE and leveled off at 1,400 ft mean sea level (msl). At 1916, the pilot requested to remain at 1,500 ft then descend to 400 ft under the John F. Kennedy Airport (JFK) Class Bravo airspace along the south shore of Long Island. The controller acknowledged the request, and the pilot continued toward his destination. At 1931, the pilot contacted JFK tower, and the tower controller cleared the pilot to fly along the shoreline at or below 500 ft. The pilot acknowledged the clearance at 1932:30. About 1 minute later, while at 700 ft msl and 0.2 nautical mile (nm) from the lateral limits of the Class Bravo airspace 500-ft shelf that he was cleared to fly underneath, the airplane began a 90ø right turn, off his previously-established course, and descended through 500 ft msl. The airplane continued on a southeasterly heading and descended to 200 ft msl before radar contact was lost at 1933:32 about 0.6 nm to the southeast of the coast of Breezy Point, Queens, New York. There were no radio transmissions or other indications of distress from the airplane.

Several witnesses saw the airplane descend into the ocean. One witness described the descent angle as about 45ø. The witness stated that he heard an "explosion" a short time later. A helicopter pilot who assisted in the search for the wreckage noted that it was "pitch black" over the water.

PERSONNEL INFORMATION

The pilot held a private pilot certificate with a rating for airplane single-engine land. His most recent third-class FAA medical certificate was issued on August 5, 2014. According to the pilot's logbook, he had accumulated about 280 total hours of flight time, of which about 270 hours were in the accident airplane make and model. The logbook showed 4 hours of night experience, which was all accumulated in September 2014 while the pilot was receiving primary flight instruction. The logbook showed 3.5 hours of simulated instrument time under the hood, with the most recent occurring on October 8, 2014, for 0.3 hour; in the remarks section of the logbook it listed that flight as "private pilot practical exam."

AIRPLANE INFORMATION

According to FAA records, the light sport airplane was manufactured in 2011 and was powered by a 100-horsepower Rotax 912ULS reciprocating engine. The airplane's most recent condition inspection was completed on November 2, 2015, at a total time in service of 321.4 hours.

METEOROLOGICAL INFORMATION

A recorded weather observation about the time of the accident at JFK, about 9 nm from the accident site, included wind from 100ø at 3 knots, visibility 10 statute miles, clear skies below 12,000 ft above ground level, temperature 14øC, dew point 11øC, and an altimeter setting of 30.35 inches of mercury.

According to the Astronomical Applications Department at the United States Naval Observatory, sunset was at 1648, the end of civil twilight was at 1717, and moonrise was at 0040 of November 5, 2015. The phase of the moon on the day of the accident was waning crescent, with 39% of the moon's visible disk illuminated.

According to a representative from Lockheed Martin Flight Services (LMFS), the pilot had no contact with LMFS or DUATS on the date of the accident.

WRECKAGE AND IMPACT INFORMATION

The wreckage was recovered from the water and examined. Flight control continuity was confirmed from all flight control surfaces to the cockpit flight controls. The engine controls remained attached to the cockpit. The throttle was in the full-forward position and the mixture was in the mid-range position. The flap indicator, ignition switch, ELT position switch, circuit breaker panel, and radio volume control remained attached to the instrument panel and no other instruments were recovered. The two seats were separated from the seat tracks.

The wing spar was separated from the fuselage. The forward section of the left wing was separated from the remainder of the wing and fragmented. The wingtip was impact-separated. The left aileron remained attached to the wing at its inboard attach point. The flap remained attached to the left wing.

The empennage was separated from the fuselage. The left stabilator remained attached to the empennage, and the right stabilator was partially separated. The rudder remained attached to the vertical stabilizer via the control cables.

The right wing remained attached to the carry-through spar. The outboard forward section of the right wing was impact-separated and fragmented, and the right wingtip was impact-separated. The right aileron remained attached to the wing at the inboard attach point, and the right flap remained attached at all attach points.

The left main landing gear remained attached to the fuselage; however, that section of the fuselage was separated from the cabin area. The left tire was impact-separated from the left main landing gear. The right main landing gear was impact-separated and the right tire remained attached. The nose landing gear remained attached to the engine mounts.

The propeller remained attached to the engine. All three blades were fractured about midspan from the propeller hub. The propeller was rotated by hand, and thumb compression was confirmed on all cylinders. The Nos. 1 and 3 top spark plugs and the Nos. 2 and 4 bottom spark plugs were removed; they were wet, light grey in color, and exhibited normal wear. The rocker box covers were removed, and crankshaft and valve train continuity was confirmed throughout the engine.

The right carburetor was impact-separated and not recovered. The left carburetor was disassembled and no anomalies were noted. The butterfly valve operated without anomaly. An odor similar to 100LL aviation fuel was noted in the carburetor. The carburetor gasket displayed no anomalies.

The engine ignition harness remained attached to the engine. All of the engine harness leads were present; however, some of the harness leads were impact-separated from their associated spark plugs.

The ballistic recovery system parachute was recovered. The parachute was separated from the airplane and was partially deployed, and the rocket motor was discharged. The ballistic recovery system handle was not recovered from the water.

MEDICAL AND PATHOLOGICAL INFORMATION

The Office the Chief Medical Examiner for the City of New York, Queens, New York, performed the autopsy on the pilot. The autopsy report indicated that the pilot died as a result of multiple blunt injuries.

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing of the pilot. Fluid and tissue specimens from the pilot tested negative for carbon monoxide and carbon dioxide. Hydroxyzine, an antihistamine, was detected in liver; however, it was not detected in blood.

ADDITIONAL INFORMATION

Spatial Disorientation

The FAA's Pilot's Handbook of Aeronautical Knowledge contained guidance that stated that, "Under normal flight conditions, when there is a visual reference to the horizon and ground, the sensory system in the inner ear helps to identify the pitch, roll, and yaw movements of the airplane. When visual contact with the horizon is lost, the vestibular system becomes unreliable. Without visual references outside the airplane, there are many situations where combinations of normal motions and forces can create convincing illusions that are difficult to overcome."

The Handbook also advised, "unless a pilot has many hours of training in instrument flight, flight in reduced visibility or at night when the horizon is not visible should be avoided."

FAA Publication "Spatial Disorientation Visual Illusions" (OK-11-1550) , stated, in part, that "false visual reference illusions may cause you to orient your aircraft in relation to a false horizon; these illusions are caused by flying over a banked cloud, night flying over featureless terrain with ground lights that are indistinguishable from a dark sky with stars, or night flying over a featureless terrain with a clearly defined pattern of ground lights and a dark starless sky." The publication provided guidance on the prevention of spatial disorientation. One of the preventive measures was "When flying at night or in reduced visibility, use and rely on your flight instruments."

Accident Rpt# ERA15LA230 06/01/2015 1905 CDT	**Regis# N59AT**	**Panama City Bea, FL**	**Apt: N/a**	
Acft Mk/Mdl SEA & SKY INC DBA KRUCKER ACFT	**Acft SN 20114**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Factual**	**Prob Caus: Pending**
Eng Mk/Mdl ROTAX 912ULS	**Acft TT 15**	**Fatal 0 Ser Inj 1**	**Flt Conducted Under: FAR 091**	
Opr Name: ANDREW E. REDMOND	**Opr dba:**		**Aircraft Fire: NONE**	
			AW Cert: LTSP	

Events

1. Enroute-climb to cruise - Loss of control in flight

Narrative

On June 1, 2015, about 1905 central daylight time, a Sea & Sky INC Cygnet weight-shift-control aircraft, N59AT, was substantially damaged when it impacted the water near Panama City, Florida. The commercial pilot was seriously injured. The aircraft was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan had been filed for the personal flight, which departed Panama City Beach, Florida at 1905.

According to the pilot, this was his first solo flight in his new aircraft after a sign off by his instructor. He stated that after takeoff, he climbed the to approximately 300 feet and leveled off. He began a turn to the right and noted an "unstable" feeling in the flight controls. He attempted to roll the aircraft to straight and level, it continued to the left and rolled into an uncommanded "steep" left banking turn. The pilot was unable to maintain control of the aircraft; subsequently it entered an aerodynamic stall and impacted the water.

According to the pilot's son he watched as the aircraft departed St. Andrews Bay. He said that as the aircraft began a slight right turn, it began to oscillate from left to right while descending. At about 50 feet above the bay the aircraft turned to the right in a 90ø bank before "crashing" into bay. A review of a video recording revealed that the pilot was in stable flight prior to the accident. In a statement made to the NTSB; the pilot's son assisted with the postaccident recovery of the aircraft and noted the wing assembly was separated from its fuselage attachment point, and was being held on by cables before the aircraft was recovered.

A Federal Aviation Administration inspector examined the airplane after the accident. According to the inspector, the wing and fuselage (trike) were buckled, and the aluminum hang block attachment and three attachment bolts had fractured. The hang block assembly was forwarded to the NTSB Materials Laboratory for further examination.

The hang block assembly consisted of a strap and saddle. The saddle was attached to the strap by three flush-head bolts on each side of the strap. The strap for the saddle was fractured on both sides through the three saddle attachment holes on the right side and the forward saddle attachment hole on the left side. Bolts for attaching the right side of the saddle to the strap were sheared. The lower fracture surfaces through the strap at the left and right had an overall twisting deformation, and both fracture surfaces had a uniform rough matte gray appearance consistent with ductile overstress fracture. The saddle attachment bolts on the right side of the saddle were fractured. The fracture features and associated deformation and contact damage were consistent with shear fracture.

The United Kingdom's Air Accidents Investigations Branch (AAIB) commissioned a safety study of the tumble mode, a peculiarity of weight-shift-control aircraft. This safety study described the inherent spiral instability of the aircraft type. According to the report, "Many weightshift microlight aircraft are spirally unstable (particularly at higher power settings); thus, an initial small bank angle is likely to increase without (unless horizon reference is available) the pilot's ability to control it. The aircraft would roll, potentially past 90ø of bank to a condition where the pendulum stability which keeps the trike below the wing ceases to act - inevitably causing some loss of control."

Accident Rpt# GAA16CA499 09/17/2016 1145 EDT	**Regis# N528WM**	**Blairstown, NJ**	**Apt: Blairstown 1N7**	
Acft Mk/Mdl ALEX MICHAEL BANTUM/TERCEL USA	**Acft SN 005**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Factual**	**Prob Caus: Pending**
Eng Mk/Mdl ROTAX 912UL	**Acft TT 60**	**Fatal 0 Ser Inj 0**	**Flt Conducted Under: FAR 091**	
Opr Name: TINZ GYRO LLC	**Opr dba:**		**Aircraft Fire: NONE**	
			AW Cert: SPE	

Summary

According to the solo student pilot, the experimental, amateur-built gyrocopter was positioned for takeoff on the runway and stopped with the brakes set. He recalled that he engaged the prerotor, increased the main rotor speed to 180 rpm, then disengaged the prerotor, released the brake, and applied full throttle. He reported that, "this is where I made my mistake. At this point I should have brought the control stick all the way back, but did not." He recalled that the gyrocopter was moving forward rapidly but that the rotor rpm decreased and that he then pulled the control stick aft. He reported that the rotor blades were flapping, the control stick became uncontrollable, and the gyrocopter exited the runway to the left.

The student pilot reduced the throttle to idle, and during the runway excursion, the left main and the nose landing gear separated from the gyrocopter. The main rotor blade struck the ground, the blade grip sustained substantial damage, and the rotor head partially separated from the frame.

The student pilot reported that there were no preaccident mechanical malfunctions or anomalies with the airframe or the engine that would have prevented normal operation.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's incorrect takeoff procedure, which resulted in a loss of main rotor rpm and the subsequent loss of directional control and runway excursion.

Events

1. Takeoff - Loss of control on ground
2. Takeoff - Retreating blade stall
3. Takeoff - Runway excursion

Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Prop/rotor parameters-Not attained/maintained - C
3. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
4. Personnel issues-Task performance-Use of equip/info-Use of policy/procedure-Student/instructed pilot - C

Narrative

According to the solo student pilot, the experimental amateur built gyrocopter was positioned for takeoff on the runway, and stopped with the brakes set.

He recalled that he engaged the pre-rotor, increased the main rotor speed to 180 revolutions per minute (rpm), then disengaged the pre-rotator, released the brake, and applied full throttle.

He reported that, "this is where I made my mistake. At this point I should have brought the control stick all the way back, but did not." He recalled that the gyrocopter was moving forward rapidly, but the rotor rpm decreased, and he then pulled the control stick aft. He reported that the rotor blades were flapping, the control stick became uncontrollable, and the gyrocopter exited the runway to the left.

The student pilot reduced the throttle to idle, and during the runway excursion the left main and the nose landing gear separated from the gyrocopter. The main rotor blade struck the ground, the blade grip sustained substantial damage, and the rotor head partially separated from the frame.

The student pilot reported that there were no mechanical malfunctions or anomalies with the airframe or the engine that would have prevented normal flight operation.

Accident Rpt# CEN17LA180	**05/11/2017 1945 CDT**	**Regis# N1041N**	**Orangeville, IL**	**Apt: N/a**
Acft Mk/Mdl BROKAW BERGON F ZODIAC-HD		**Acft SN 6-3013-HDS**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Prelim** **Prob Caus: Pending**
Eng Mk/Mdl BOMBARDIER ROTAX (ALL)			**Fatal 0** **Ser Inj 1**	**Flt Conducted Under: FAR 091**
Opr Name: BAKER MARK A		**Opr dba:**		**Aircraft Fire: NONE**
				AW Cert: SPE

Events

1. Enroute - Loss of engine power (total)

Narrative

On May 11, 2017, about 1945 central daylight time, a Brokaw Bergon Zodiac airplane, N1041N conducted a forced landing near Orangeville, Illinois. The private rated pilot received serious injuries and the airplane was substantially damaged. The airplane was registered to and operated by a private individual under the provisions of the 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time.

Initial information from the responding Federal Aviation Administration (FAA) inspector, indicated the pilot was on a return flight. During cruise, the engine lost power, and the pilot selected a hay field for the forced landing. The airplane landed hard and came to rest up right. The inspector noted substantial damage to the airplane's fuselage and fuel was present on site.

The airplane was retained for further examination.

Accident Rpt# ERA15LA381	**08/07/2015 1400 EDT**	**Regis# N330B**	**Charlotte, VT**	**Apt: Pvt NONE**	
Acft Mk/Mdl BROWN JAMES W ZENITH STOL CH 750-N		**Acft SN 75-7469**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Factual**	**Prob Caus: Pending**
Eng Mk/Mdl CONTINENTAL O-200-A		**Acft TT 55**	**Fatal 0**	**Ser Inj 0**	**Flt Conducted Under: FAR 091**
Opr Name: BROWN JAMES W		**Opr dba:**			**Aircraft Fire: NONE**
					AW Cert: SPE

Events

1. Landing-landing roll - Landing gear collapse

Narrative

On August 7, 2015, about 1400 eastern daylight time, an experimental amateur-built Zenith STOL CH 750, N330B, was substantially damaged by a nose landing gear collapse and nose-over event after landing at a private grass airstrip in Charlotte, Vermont. The commercial pilot and a passenger were not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

According to the builder/owner of the airplane, the pilot and the passenger were flying the airplane because the passenger was interested in purchasing it.

According to the pilot, he established the airplane on a "normal" approach for landing at the airplane owner's private airstrip, after picking up the passenger and completing a short flight in the local area. The pilot reported the runway was oriented 190 degrees, and that there was a crosswind from 270 degrees at 8 knots. Upon touchdown, the nose landing gear fork "deformed," the wheel locked, and dug into the turf. The airplane then nosed over. The wings, firewall, and vertical stabilizer were substantially damaged.

A witness familiar with the airplane said she saw the landing, but not the nose-over event. She said the landing appeared "a little faster than I had seen before."

The pilot held a commercial pilot certificate with ratings for airplane single engine land, multiengine land and instrument airplane. His most recent second-class medical certificate was issued on June 16, 2015. The pilot reported 2,130 total hours of flight experience, of which 46 hours were in the accident airplane make and model.

The two-seat, single-engine, high-wing airplane was manufactured in 1974 and was equipped with a Continental O-200 series engine. Its most recent annual inspection was completed on September 18, 2014. At the time of the accident, the airplane had accrued 54.8 total aircraft hours.

The pilot suggested that because the replacement nose landing gear assembly received after the accident was "more robust" than the originally-installed assembly, the original design was "too lightweight."

The nose landing gear fork and doubler assembly was examined in the NTSB Materials Laboratory in Washington, DC. Examination revealed that the materiel and the dimensions of the assembly met the specifications of the manufacturer's engineering drawings. Additionally, the "kinematic deformation" of the doubler assembly was consistent with a side-load application.

Accident Rpt# GAA17CA184 **03/10/2017 1530 PST** **Regis# N425AG** **Santa Maria, CA** **Apt: Santa Maria Pub/capt G Allan H SMX**

Acft Mk/Mdl CSP LEASING LLC CAVALON-NO SERIES **Acft SN V00208** **Acft Dmg: SUBSTANTIAL** **Rpt Status: Factual** **Prob Caus: Pending**

Eng Mk/Mdl ROTAX 914 **Acft TT 129** **Fatal 0** **Ser Inj 0** **Flt Conducted Under: FAR 091**

Opr Name: DANIEL C. COLLIE **Opr dba:** **Aircraft Fire: NONE**

AW Cert: SPE

Summary

The student pilot reported that, during a stop-and-go landing in crosswind conditions, the gyroplane bounced about 4 ft. He added that the wind lifted the gyroplane and that he did not have "the speed or rudder control to counteract" the drift. The gyroplane impacted the ground on its right side.

The gyroplane sustained substantial damage to the empennage.

The student pilot reported that there were no preaccident mechanical failures or malfunctions with the airframe or engine that would have precluded normal operation.

A review of recorded data from the automated weather observation station located on the airport revealed that, about 39 minutes before the accident, the wind was from 300ø at 8 knots. The gyroplane landed on runway 30.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's improper landing flare and subsequent failure to maintain crosswind correction during landing in crosswind conditions.

Events

1. Landing - Abnormal runway contact
2. Landing - Miscellaneous/other
3. Landing - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Landing flare-Not attained/maintained - C
3. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Crosswind correction-Not attained/maintained - C

Narrative

The student pilot reported that during a stop-and-go landing in crosswind conditions, the gyroplane bounced about 4 ft. He added that the wind lifted the gyroplane and he did not have "the speed or rudder control to counteract" the drift. The gyroplane impacted the ground on its right side.

The gyroplane sustained substantial damage to the empennage.

The student pilot reported that there were no preaccident mechanical failures or malfunctions with the airframe or engine that would have precluded normal operation.

A review of recorded data from the automated weather observation station located on the airport revealed that about 39 minutes before the accident the wind was 300ø at 8 knots. The gyroplane landed on runway 30.

Accident Rpt# ERA16LA067	**12/13/2015 1724 EST**	**Regis# N92744**	**Lenoir, NC**	**Apt: Lower Creek NC27**
Acft Mk/Mdl GOLDEN CIRCLE AIR INC T BIRD II-NO		**Acft SN 28434**	**Acft Dmg: DESTROYED**	**Rpt Status: Factual Prob Caus: Pending**
Eng Mk/Mdl ROTAX 582DCDI			**Fatal 0 Ser Inj 1**	**Flt Conducted Under: FAR 091**
Opr Name: BEN R. PROFFIT		**Opr dba:**		**Aircraft Fire: NONE**
				AW Cert: SPE

Events

1. Approach-VFR pattern crosswind - Aerodynamic stall/spin

Narrative

On December 13, 2015, at 1724 eastern standard time, an experimental light sport Golden Circle Air T Bird II, N92744, was destroyed after it departed controlled flight and crashed into trees and terrain after takeoff from Lower Creek Airport (NC27), Lenoir, North Carolina. The private pilot/owner was seriously injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which was conducted under the provisions of Title14 Code of Federal Regulations Part 91.

The Federal Aviation Administration (FAA) inspector who responded to the scene said he recovered a wing-mounted video camera, removed the data card, and downloaded the contents. Review of the data revealed the accident flight was captured on the card.
Examination of the video revealed that the camera was mounted on the left wing, pointed spanwise along the wing, and provided a view of the cockpit. The pilot could be seen with his left hand on the yoke, but his right hand, which was in the vicinity of the engine throttle, was obscured.

The airplane took off and completed the upwind leg of the traffic pattern, and initiated a turn to the right towards the crosswind leg. The sound of the engine was smooth and continuous throughout the takeoff and climb. As the airplane entered the turn, a reduction in power was heard, but the engine sound remained smooth and continuous. At the moment of power reduction and the initiation of the turn, the pilot simultaneously applied left aileron, right rudder, and back pressure on the yoke.

As the airplane rolled right and into a nose-down spin, the engine could be heard accelerating.

The "Remove Before Flight" flag on the locking pin for the Ballistic Recovery System (BRS) parachute deployment handle was observed in the camera's field of view, as the pilot struggled with one hand and then two hands to remove the pin during the descent. Eventually, the pilot freed the pin, and actuated the deployment handle as the nose of the airplane entered the tops of the trees.

The pilot held a private pilot certificate with a rating for airplane single-engine land. His most recent second-class Federal Aviation Administration (FAA) medical certificate was issued on July 8, 2011, and he reported 40 total hours of flight experience on that date.

Examination of excerpts from the pilot's logbook revealed he had logged 90.6 total hours of flight experience, 25 hours of which were in the accident airplane make and model. The pilot logged 7 hours of flight experience in the 90 days prior to the accident, and 1.2 hours in the 30 days prior; all of which was in the accident airplane.

The airplane was manufactured in 2001. The maintenance records were not recovered, therefore the maintenance and inspection history of the airplane could not be determined.

At 1735, the weather recorded at Morgantown-Lenoir Airport, 10 miles southwest of the accident site, (MRN) included winds from 140 degrees at 3 knots.

Examination of the wreckage by the FAA inspector revealed no pre-impact mechanical anomalies. The BRS parachute was free from its canister, but was not fully deployed.

According to the FAA Airplane Flying Handbook:

The aerodynamic effects of the uncoordinated, cross-control stall can surprise the unwary pilot because it can occur with very little warning and can be deadly if it occurs close to the ground. A cross-control stall occurs when the critical AOA is exceeded with aileron pressure applied in one direction and rudder pressure in the opposite direction, causing uncoordinated flight. A skidding cross-control stall is most likely to occur in the traffic pattern during a poorly planned and

executed base-to-final approach turn in which the airplane overshoots the runway centerline and the pilot attempts to correct back to centerline by increasing the bank angle, increasing back elevator pressure, and applying rudder in the direction of the turn (i.e., inside or bottom rudder pressure) to bring the nose around further to align it with the runway.

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Prepared From Official Records of the NTSB By:
Air Data Research
9865 Tower View, Helotes, Texas 78023
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Accident Rpt# GAA17CA287	**05/12/2017 1540 PDT**	**Regis# N1111E**	**Austin, NV**	**Apt: Austin Airport TMT**
Acft Mk/Mdl JOHNSON KENNETH W SUPER CUB		**Acft SN 471C**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Prelim** **Prob Caus: Pending**
			Fatal 0 **Ser Inj 0**	**Flt Conducted Under: FAR 091**
Opr Name: DORY JOE		**Opr dba:**		**Aircraft Fire: NONE**

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Accident Rpt# ERA16CA290 08/12/2016 1000 EDT	**Regis# N910RK**	**London, KY**	**Apt: London-corbin Arpt-magee Field LOZ**	
Acft Mk/Mdl KESSINGER ROGER L RANS	**Acft SN 296**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Factual**	**Prob Caus: Pending**
Eng Mk/Mdl ROTAX 503 DCDI	**Acft TT 37**	**Fatal 0 Ser Inj 1**	**Flt Conducted Under: FAR 091**	
Opr Name: EVERETT HATHORN	**Opr dba:**		**Aircraft Fire: NONE**	
			AW Cert: SPX	

Summary

After a 1-hour local flight during which he familiarized himself with the airplane's stall characteristics, the student pilot/owner of the experimental light sport airplane returned to his home airport to practice touch-and-go landings. The airplane bounced during the final landing attempt, and while recovering, the student applied full power to the engine for a go-around. The student stated that the airplane then banked to the right due to the engine's counter-clockwise rotation "p factor effect" and began heading toward a hangar located off the right side of the runway. Due to the airplane's low altitude and airspeed, the student chose to continue the right turn to avoid colliding with the hangar, and once clear of it, tried to climb the airplane to clear an approaching tree line; however, the airplane's right wing struck one of the trees. The airplane then impacted the ground, which resulted in substantial damage to the airframe and serious injuries to the pilot. The pilot reported that there were no mechanical malfunctions or failures of the airplane or engine that would have precluded normal operation. He attributed the loss of control during the go-around attempt to his unfamiliarity with the flight characteristics of the counter-clockwise rotation of the airplane's two-stroke engine and his lack of flight experience in experimental light sport airplanes.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's improper recovery from a bounced landing and his subsequent failure to maintain clearance from trees during an attempted go-around.

Events

1. Landing - Hard landing
2. Approach-VFR go-around - Loss of control in flight

Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Landing flare-Incorrect use/operation - C
3. Environmental issues-Physical environment-Object/animal/substance-Tree(s)-Effect on operation - C

Narrative

After a 1 hour local flight where he explored the airplane's stall characteristics, the student pilot/owner of the experimental light sport airplane returned to his home airport to practice touch-and-go landings. The pilot "bounced" the airplane during the final landing attempt, and while recovering applied full power to the engine for a go around. The pilot stated that the airplane then banked to the right as a result of the counterclockwise rotating-engine's "p factor effect," and began heading toward a hangar located off the right side of the runway. Due to the airplane's low altitude and airspeed, the pilot elected to continue the right turn to avoid colliding with the hangar, and once clear of it, tried to climb the airplane to clear an approaching tree line. The pilot was unsuccessful in this attempt and the airplane's right wing struck one of the trees. The airplane then impacted the ground, resulting in substantial damage to the airframe and seriously injuring the pilot.

The pilot reported that there were no mechanical malfunctions or failures of the airplane or its engine that would have precluded normal operation. He further attributed the loss of control during the go around attempt to his unfamiliarity with the flight characteristics of the counter clockwise rotation of the airplane's two-stroke engine, and his lack of flight experience in experimental light sport airplanes.

Accident Rpt# CEN15FA141	**02/11/2015 1433 MST**	**Regis# N564ER**	**Kersey, CO**	**Apt: Greeley-weld County GXY**
Acft Mk/Mdl RICHARD LACOURSE WHEELER		**Acft SN XP0123**	**Acft Dmg: DESTROYED**	**Rpt Status: Factual Prob Caus: Pending**
Eng Mk/Mdl LYCOMING IO-540-S1A5		**Acft TT 14**	**Fatal 2 Ser Inj 0**	**Flt Conducted Under: FAR 091**
Opr Name: LACOURSE RICHARD		**Opr dba:**		**Aircraft Fire: GRD**
				AW Cert: SPE

Summary

The private pilot/owner of the experimental amateur-built airplane and an airline transport pilot-rated passenger arrived at an airport, and a mechanic heard the engine backfiring and "missing." The pilots subsequently stated to the mechanic that they had been experiencing problems with the engine. The mechanic offered that his boss could look at the engine, but the pilots did not want to wait. The mechanic accompanied the pilots to the airplane, and helped them start it with auxiliary power. They then realized the starter solenoid was not engaging the starter. About 10 minutes later, the pilot requested a jumper wire to bypass the the starter solenoid in order to start the engine. The engine started, and, as the airplane taxied for takeoff, the mechanic noted that the engine was still running rough.

A witness, who was located about 3/4 mile from the accident location, reported hearing the airplane's engine "sputtering." When the airplane flew over about 200-300 ft above ground level, the engine was running rough and occasionally "missing." He then heard the engine stop running and saw the airplane subsequently descend about 30ø nose-low into an open field at high speed.

There was an immediate postimpact fire. An examination of the airplane, engine, and other airplane systems revealed no anomalies.

The pilot had not completed a flight review in over 7 years; had not logged any flight time in the 2 years before the accident; and his recency of flight experience, including the last time he may have practiced emergency procedures, could be determined. Although the reason for the loss of engine power could not be determined during postaccident examination, the high-speed, nose-low impact is consistent with a loss of airplane control.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain airplane control during an off-airport forced landing following a total loss of engine power for reasons that could not be determined during postaccident examination of the engine. Contributing to the accident was the pilots' decision to conduct the flight with known mechanical deficiencies.

Events

1. Enroute-cruise - Loss of engine power (total)
2. Uncontrolled descent - Unknown or undetermined
3. Emergency descent - Loss of engine power (total)

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-(general)-Not attained/maintained - C
2. Aircraft-Aircraft power plant-Engine (reciprocating)-(general)-Failure - C
3. Not determined-Not determined-(general)-(general)-Unknown/Not determined - C
4. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
5. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - F

Narrative

HISTORY OF FLIGHT

On February 11, 2015, about 1433 mountain standard time, an experimental, amateur-built Wheeler Express, N564ER, impacted terrain while performing an off-airport forced landing near Kersey, Colorado. The private pilot and airline transport pilot-rated passenger were fatally injured, and the airplane was destroyed. The airplane was privately owned and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed and no flight plan was filed. The airplane departed from Greeley-Weld County Municipal Airport (GXY), Greeley, Colorado, and was en route to Front Range Airport (FTG), Watkins, Colorado.

An airframe and powerplant mechanic at GXY reported hearing the accident airplane's engine making odd noises as it taxied to the parking area. He stated that the engine was backfiring and sounded like one or more of the cylinders was misfiring. He went outside and saw the airplane taxi to the ramp in front of the airport terminal.

Later, the two pilots came into his shop and stated that they were experiencing difficulty with the airplane's engine. The mechanic stated that his boss would be more knowledgeable about the subject and that he would return in about 35 minutes. The pilots stated that they did not want to wait that long and planned to return to FTG. The mechanic offered to accompany them to the airplane and listen to the engine as they started it. The pilots proceeded to board the airplane without conducting a preflight inspection and attempted to start the engine; however, the engine would not start. The mechanic assisted the pilots in starting the engine with auxiliary power and found that the battery had a charge but that the starter solenoid "didn't click like it should" and was not engaging the starter. Both pilots disembarked the airplane, and the mechanic returned to his work.

About 10 minutes later, one of the pilots requested a "jumper wire" from the mechanic so that he could bypass the starter solenoid. A subsequent attempt to start the engine was successful. The mechanic stated that, as the airplane taxied out to the runway, the engine began to run rough; however, the pilots continued their taxi. The mechanic did not see the takeoff but was informed shortly thereafter that the airplane had crashed.

Another witness, who was standing outside his shop about 3/4 mile from the accident location, reported hearing an airplane's engine "sputtering." When the airplane flew over him about 200-300 ft. above ground level, the engine was running rough and occasionally "missing." The airplane proceeded southeast when he heard a backfire; he thought the engine stopped running. The airplane then descended and impacted the ground at high speed in an approximate 30ø nose-down attitude. There was an immediate postimpact fire. The witness called 911, went to the accident location, and fought the fire with several handheld fire extinguishers until emergency responders arrived.

PERSONNEL INFORMATION

The 65-year-old pilot held a private pilot certificate with a single-engine land rating. He also held a repairman experimental amateur builder certificate. On February 25, 2013, he was issued a Federal Aviation Administration (FAA) third-class medical certificate with a limitation requiring corrective lenses. On the medical certificate application, the pilot reported 250 total hours of flight experience, and 20 hours in the preceding six months.

A review of the pilot's logbooks revealed that his most recent flight review was completed on September 22, 2007. Between the time of his flight review and the accident flight, the pilot's logbook showed two additional flights, one on February 15, 2013, where he performed takeoffs and landings, and the other on April 3, 2013, which was a high-speed taxi and flight test of the accident airplane. The two flights totaled 1.4 hours.

The passenger, age 79, held an airline transport pilot certificate with ratings for airplane single-engine land, single-engine sea, multi-engine land, and instrument. He was also type-rated in several commercial and business aircraft. Additionally, he held a flight engineer certificate for turbojet aircraft. On April 2, 2014, he was issued a third-class medical certificate with a limitation that he must have glasses available for near vision. On the medical certificate application, the pilot reported he had flown 22,750 total hours, with 23.7 hours in the preceding 6 months.

A review of the passenger's logbook revealed that he successfully completed a flight review on April 23, 2014.

AIRCRAFT INFORMATION

The composite construction airplane was a four-place, low-wing, tricycle landing gear monoplane. It was built from a kit by the pilot/owner and completed in 2013. It was equipped with two 46-gallon fuel tanks located in the wings and powered by a Lycoming IO-540-S1A5 engine, rated at 300 hp at 2,800 rpm, which drove a Hartzell HC-C2YR-1BF two-bladed constant-speed propeller.

A review of the airplane's maintenance logbooks revealed that the pilot completed a condition inspection on March 3, 2014. The recorded tachometer time at the annual inspection was 5.0 hours. The airframe hours (Hobbs) meter was recovered at the accident site. The time on the meter read 14.4 hours.

METEOROLOGICAL INFORMATION

The 1435 automated weather observation at GXY, about 6 statute miles northwest of the accident site, recorded wind from 190ø at 5 knots, visibility 10 statute miles, clear skies, temperature 52øF, dew point 27øF, and an altimeter setting of 30.34 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The accident site was located about 2 statute miles south of the town of Kersey in a field at the corner of two county roads. The main wreckage consisted of the airplane's separated propeller, separated engine, cabin area, baggage compartment, left and right wings, nose and main landing gear, aft fuselage, and the separated empennage.

The accident scene began with a 20-ft-long impact crater and ground scar that extended on a southeast heading. The impact crater at the northwest end of the ground scar was about 3 ft. wide and 12 inches deep. Impressions perpendicular to the left and right of the impact crater corresponded with the leading edges of the left and right wings and the left main landing gear. The propeller was embedded in the impact crater and broken torsionally at the phalange. The blades showed torsional bending, leading edge bends and gouges, and chordwise scratches. Along the ground scar and proceeding into the subsequent debris field were pieces of broken cowling, the nose gear, portions of the forward fuselage, and the fuel selector.

The debris field extended about 75 ft. southeast from the ground scar. Within the debris field were broken pieces from the wings, forward fuselage and windscreen, broken cabin interior and instrument panel pieces, avionics, radios, and navigation and flight instruments. The empennage came to rest inverted at the end of the debris field and was broken at the fuselage just forward of the leading edge of the vertical stabilizer. The vertical stabilizer and rudder were intact. The left horizontal stabilizer was broken aft at the outboard end and the left elevator was separated. The right horizontal stabilizer was crushed and broken aft along the leading edge. About 10 ft. beyond the empennage were broken parts of the aft fuselage and the left elevator.

About 30 ft. southeast of the empennage was a burned area of grass and dirt that ran along the north side of an east-west oriented dirt road. The burned area was about 50 ft. long and 10 ft. wide. The burned area contained the remainder of the airplane's cabin, the left and right wings, fuel tanks, and the main landing gear. These components were charred and consumed by the postimpact fire.

The intact engine, with the engine mounts and the airplane's firewall, came to rest upright on the road east of the burned area. The forward fuselage around the firewall was crushed inward and aft. The engine mounts were bent downward.

Flight control continuity to the elevator, rudder, and ailerons was established at the accident scene.

MEDICAL AND PATHOLOGICAL INFORMATION

Autopsies of both pilots were conducted by the Weld County, Colorado Coroner at Loveland, Colorado,. Both pilots' cause of death was attributed to multiple force injuries suffered in an airplane crash.

Toxicology testing on the pilot, performed by the FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, identified 0.010 gm/dl of ethanol in muscle, but no ethanol in liver. In addition, losartan, a prescription blood pressure medication, was identified in the liver but not in blood. Ethanol is the alcohol found in beer, wine, and liquor and federal regulation limits pilots to no more than 0.04 gm/dl when flying. Ethanol may also be produced in body tissue after death.

Toxicology testing performed on the pilot-rated passenger identified diphenhydramine in liver and blood. The level of diphenhydramine in the blood was below the level of quantification.

TESTS AND RESEARCH

The airplane was examined in further detail at a salvage facility in Greeley, Colorado. The fuel selector was found to be on the left tank.

The engine was separated from the cowling and engine mounts, and the valve covers, accessories, and top spark plugs were removed; the engine was suspended from a forklift for the examination. The crankshaft was rotated by hand, and thumb compression was established on all cylinders. Engine drive train continuity was established throughout. Borescope examination of the cylinders revealed no anomalies. The right magneto was separated from the engine, and the left magneto remained partially attached. Both magnetos were impact-damaged and would not produce spark. The fuel servo was found attached to the sump. The brass plug was found tight and properly safetied. The fuel inlet screen and injectors were free of debris. The oil pick-up screen was also found free of debris. The examination showed no indication of any pre-impact anomalies.

Fuel receipts obtained from FTG showed that the pilot fueled the airplane with 20 gallons of 100 low lead aviation gasoline on February 6, 2015.

A review of the engine logbooks showed the engine was last overhauled on July 1, 1994.

According to Lycoming Service Instruction 100.9AW, engine overhauls should be performed every 12 years or 1,800 hours of operation, whichever occurs first.

The handheld GPS unit that was recovered with the airplane was examined at the NTSB Vehicle Performance Laboratory in Washington, DC, on October 6, 2015. The unit was powered up and data was extracted. The accident flight was not recorded.

Accident Rpt# WPR17LA098 05/05/2017 915 MDT	**Regis# N136BC**	**Hanksville, UT**	**Apt: Hanksville HVE**	
Acft Mk/Mdl ROBERT E BOUNDS BOUNDS	**Acft SN 01**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Prelim**	**Prob Caus: Pending**
		Fatal 0 Ser Inj 2	**Flt Conducted Under: FAR 091**	
Opr Name: BOUNDS ROBERT E	**Opr dba:**		**Aircraft Fire: NONE**	
			AW Cert: SPE	

Events

1. Landing-landing roll - Nose over/nose down

Narrative

On May 5, 2017, about 0915 mountain daylight time, an experimental amateur-built Bounds Bearcoupe, N136BC, nosed-over during landing at Hanksville Airport, Hanksville, Utah. The airplane was registered to and operated by the pilot as a personal flight under the provisions of 14 Code of Federal Regulations Part 91. The private pilot and flight instructor were seriously injured, and the airplane sustained substantial damage. The local flight departed from a backcountry airstrip known as Hidden Splendor about 0830. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot stated that during the landing approach to the dirt runway 35, he transitioned control of the airplane to the flight instructor. He stated that as soon as the main landing gear touched the ground, the airplane nosed-over. The airplane sustained substantial damage to the vertical stabilizer, rudder, and forward fuselage.

Accident Rpt# GAA17CA214 04/01/2017 1154 MST	**Regis# N9898R**	**Willcox, AZ**	**Apt: Cochise County P33**
Acft Mk/Mdl RONALD J BENDER BAKING DUCE-NO	**Acft SN 0001**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Factual Prob Caus: Pending**
Eng Mk/Mdl LYCOMING O-290-G	**Acft TT 12**	**Fatal 0 Ser Inj 0**	**Flt Conducted Under: FAR 091**
Opr Name: LAWRENCE J. WILLIAMS II	**Opr dba:**		**Aircraft Fire: NONE**
			AW Cert: SPE

Events

1. Landing-landing roll - Loss of control on ground

Narrative

The pilot of the tailwheel-equipped airplane reported that during the landing roll as he pulled the power to idle and lowered the tail, he raised the flaps and the airplane encountered a "sudden and strong wind" that caused the airplane to weather-vane. Subsequently, the airplane veered off the right side of the runway, the main landing gear collapsed, and the airplane came to rest nose down.

The airplane sustained substantial damage to both right and left wings and both lift struts.

The pilot reported that there were no pre-accident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

Accident Rpt# GAA17CA280	**05/15/2017 1600 PDT**	**Regis# N184ME**	**Vacaville, CA**	**Apt: Nut Tree VCB**
Acft Mk/Mdl WEAVER STANLEY R/ROBINSON SCOT		**Acft SN 82158**	**Acft Dmg: SUBSTANTIAL**	**Rpt Status: Prelim** **Prob Caus: Pending**
			Fatal 0 **Ser Inj 0**	**Flt Conducted Under: FAR 091**
Opr Name: STANLEY R. WEAVER		**Opr dba:**		**Aircraft Fire: NONE**

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